

Miscellaneous

USSR

UDC 542.67:546.217

KIRSH, A. A., STECHKINA, I. B., and FUKS, N. A., Physical-Chemical Institute
Imeni L. Ya. Karpov, Moscow

"Gas Flow in Filters Consisting of Polydispersed Ultrafine Fibers"

Moscow, Kolloidnyy Zhurnal, Vol 35, No 4, Jul-Aug 73, pp 670-675

Abstract: Resistance of filters consisting of polydispersed ultrafine fibers has been determined at a pressure range from 760 to 4 torr. A semiempirical formula has been proposed for the calculation of the resistance of these filters as a function of Knudsen number, allowing for the density of their packing, degree of the nonhomogeneity of their structure and the polydispersion of the fibers. It has been established that polydispersion of the filter fibers has no effect on the pressure drop at the filter, expressed as a function of Kn in spite of the fact that thick and fine fibers have basically different flow regimens.

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Aerosols

USSR

UDC 541.18.2/3

KIRSH, A. A.

"Effect of External Electric Field on Precipitation of Aerosol Particles on a Fiber Filter"

Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 5, No 5, 1971, pp 750-763

Abstract: Results are presented from measurement of precipitation of uncharged, monodispersed aerosols of dibutyl phthalate (DBP) with particle radius between 0.66 and 2.1μ , and selenium with a radius of 0.06μ in several models and on a commercial filter made of lavsan fibers. The DBP and selenium aerosols were produced by condensation of supersaturated vapor on sodium chloride nuclei approximately 50 A in radius.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF INERTIA ON THE CAPTURE COEFFICIENT OF AEROSOL PARTICLES
ON CYLINDERS AT LOW STOKES NUMBERS -U-
AUTHOR-(03)-STECHKINA, I.B.; KIRSH, A.A., FUKS, N.A.
COUNTRY OF INFO--USSR
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3 PP 467
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--AEROSOL, PARTICLE CAPTURE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/0415 STEP NO--UR/0069/70/032/003/0467/0467
CIRC ACCESSION NO--AP0122595
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS SHOWN BY CALCULATIONS, AT VERY LOW STOKES NUMBERS INERTIA DOES NOT INCREASE (AS IS USUALLY BELIEVED), BUT RATHER DECREASES THE CAPTURE COEFFICIENT OF AEROSOL PARTICLES OF FINITE SIZE ON A CYLINDER ORIENTED NORMAL TO THE FLOW. FACILITY: FIZIKO-KHIMICHESKIY INSTITUT IM. L. YA. KARPOVA MOSCOW.

UNCLASSIFIED

USSR

K Aerosols

UDC 541.182/3:542.67

STECHKINA, I. B., KIRSH, A. A., and FUKS, N. A., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Effect of Inertia on the Coefficient of Capture of Aerosol Particles on Cylinders at Low Stokes Numbers"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 1970, p 467

Abstract: In previous work by the authors (Kolloidn. Zh., 31, 121, 1969 - see also S. V. Dawson, Transactions of the 9th AEC Cleaning Conference, Boston, Sep 66, p 647) the conclusion was reached that inertia under all conditions increases the coefficient of capture of aerosol particles on cylinders oriented in a direction normal to the flow of the particles. Subsequent calculations showed that this conclusion is not correct; at low Stokes numbers, inertia reduces rather than increases the coefficient of capture. This is due to the fact that inertial displacement of particles in the line of flow during approach to the cylinder increases capture, whereas inertial displacement away from the cylinder after the flow has passed around it has the opposite effect. The result obtained is $1/2$

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STECHKINA, I. B., et al, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 1970, p 467

of purely theoretical value, because it applies only to particles with Stokes numbers which are so small that the effect of inertia can be disregarded.

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Power, Turbine, Engines, Pumps

USSR

UDC 621.133.713.001.5

K
KIRSH, A. K., SHISHKIN, A. G.

"Results of Experimental Adjustment Operations on the LMZ Feed Pump Group of a 300 Megawatt Unit"

Moscow, Teploenergetika, No 8, August 1970, pp 15-22

Abstract: The article presents the results of experimental adjustment operations on the main feed turbopump and the starting and reserve electric pump produced by the LMZ (Leningrad Metal Plant), carried out by the ORGRES (State Trust for the Organization and Rationalization of Regional Electric Power Plants and Networks) in the process of developing 300 megawatt units. The basic characteristics of the pump units and their components are given, as well as efficiency indicators; the load range handled by these pump units is defined.

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1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STRUCTURAL CHANGES IN MACROMOLECULES OF
POLY,4,VINYL,N,ISOANYLPYRIDINIUM BROMIDES -U-
AUTHOR-(05)-KIRSH, YU.E., BESSMERTNAYA, L.YA., TORCHILIN, V.P., PAPISOV,
I.M., KABANOV, V.A.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 603-6 (CHEM) K

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MACROMOLECULE, POLYMER, VINYL COMPOUND, PYRIDINE, BROMINATED
ORGANIC COMPOUND, ELECTROPHORESIS.

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0695

STEP NO--UR/0020/70/191/003/0603/0606

CIRC ACCESSION NO--AT0125367

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0125367

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALKYLATION OF
POLY(4,VINYLPYRIDINE) WITH ISOAMYL BROMIDE GAVE
POLY,(4,VINYL,N,ISOARYLPYRIDINIUM BROMIDE) (I) CONTG. VARIOUS AMTS.
(ALPHA) OF THE TERTIARY N ATOMS. THE CHANGES OF THE INTRINSIC VISCOSITY
OF I IN WATER (OBTAINED BY EXTRAPOLATION OF THE REDUCED VISCOSITY (ETA)
AT I CONCN. LESS THAN 0.01 G-DL. ONLY, SINCE ABOVE THAT CONCN. ETA
BEGINS TO DECREASE) INDICATE THAT I MOLLS. COIL UP AT THE LOW ALPHA
VALUES, BECOMING SMALLEST AT ALPHA 12.2PERCENT, AND THEN BEGIN TO UNCOIL
WITH ALPHA INCREASE LESS THAN OR EQUAL TO 40PERCENT. THESE RESULTS WERE
CONFIRMED ALSO BY THE CHANGES OF I ELECTROPHORESIS RATE WITH ALPHA.
FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ASCORBATE OXIDASE ACTIVITY OF A COMPLEX OF CU PRIME2 POSITIVE AND
POLY(4,VINYLPYRIDINE) PARTIALLY ALKYLATED BY BROMOACETIC ACID -U-
AUTHOR-(04)-VENEROVA, N.A., KIRSH, YU.E., KABANOV, V.A., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSR 1970, 190(1), 131-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST ACTIVITY, COMPLEX COMPOUND, BROMINATED ORGANIC
COMPOUND, OXIDATION, COPPER COMPLEX, PYRIDINE, ALKYLATION, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1985/1902

STEP NO--UR/0020/70/190/001/0131/0134

CIRC ACCESSION NO--AT0101946

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0101946

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATALYTIC ACTIVITY OF THE TITLE COMPLEX (I) IN THE OXIDN. OF ASCORBIC ACID (II) BY O WAS COMPARED WITH THAT OF CU PRIME2 POSITIVE ALONE AND ITS LOW MOL. WT. ANALOG, PYRIDINIUM BROMOACETATE (III). THE OXIDN. WAS STUDIED IN 0.02M ACETATE BUFFER AT PH 4.3 AND 25 PLUS OR MINUS 0.1DEGREE. IN THE PRESENCE OF I, THE OXIDN. RATE INCREASED, AND THE RATE WAS LESS EFFECTIVELY ACCELERATED BY THE INCREASING II CONCN. THIS SUGGESTED THE FORMATION OF A MICHAELIS COMPLEX AS OBSD. IN ENZYME REACTIONS. COMPARISON OF THE I DISSOCN. CONCT. ((2.5 PLUS OR MINUS 0.5) TIMES 10 PRIME NEGATIVE3) WITH THAT OF THE CU PRIME2 POSITIVE PYRIDINE COMPLEX INDICATED THAT CU PRIME2 POSITIVE IN I WAS ASSOCD. WITH THE UNALKYLATED PYRIDINE RINGS. III HAD NO EFFECT ON THE OXIDN. OF II IN THE PRESENCE OF CU PRIME2 POSITIVE. I WAS GREATER THAN 10 PRIME3 MORE ACTIVE THAN CU PRIME2 POSITIVE ALONE. SINCE 100DMETHYLATED POLY(4,VINYLPYRIDINE) (DEGREE OF SUBSTITUTION 70PERCENT) DID NOT CHANGE THE ACTIVITY OF CU PRIME2 POSITIVE, THE HO SUB2 CCH SUB2 GROUPS OF I WERE ALSO RESPONSIBLE FOR INCREASING THE CATALYTIC ACTIVITY. THE INCREASED ACTIVITY WAS THUS ASSUMED TO BE DUE TO THE FORMATION OF ACTIVE CAVITIES CONTG. PYRIDINE RINGS SURROUNDED BY HO SUB2 CCH SUB2 GROUPS IN THE MACROMOL. COILS OF I.

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Acc. Nr:

AP0042509

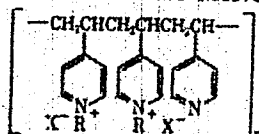
Abstracting Service:
CHEMICAL ABST.

4-76

Ref. Code:

UR0459

86675v Synthetic polymeric analogs of enzymes with ester-
ase activity. Kirsh, Yu. E.; Pluzhnyov, S. K.; Shomina, T. S.;
Kabanov, V. A.; Kargin, V. A. (Mosk. Gos. Univ. im. Lomonoso-
va, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1976, 12(1),
186-204 (Russ). Polymeric catalysts (I, R = Me, Et, Pr, iso-Pr,
Bu, iso-Bu, isoamyl, PhCH₂ and X = Cl, Br, I) were prepd. by
partial N-alkylation of poly(4-vinylpyridine) with the correspond-
ing alkyl halide at 60-70° in 10:1 MeNO₂-MeOH. I had high



catalytic activity and selectivity in the hydrolysis of esters such
as *p*-NO₂C₆H₄OAc. The active centers for the catalysis were the
unsubstituted pyridine rings. The catalytic activity of an unal-
kylated link was 10^{4.5}-10^{5.5} times greater than that of the simplest
analog, 4-ethylpyridine. The kinetic behavior of I was similar to
that of α-chymotrypsin. The kinetic parameters for each step of
the hydrolysis were calcd., and their dependence on the nature of

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the substituents and macromol. dimensions were detd. The catalytic activity of I was a function of their shape in soln. and the type of solvent. The high catalytic activity of I was explained by the development of local hydrophobic cavities, each of which contains a nucleophilic group (pyridine ring) and is surrounded by hydrophobic substituents.

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USSR

UDC: 621.3.083.8:531/768

BYKOV, V. A., VOLKOV, L. H., VOLNYANSKIY, V. N., KISHCHENKOV, O. V.,
SARINGULYAN, Ye. Kh., FILATOV, V. M.

"A Digital Accelerometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 31, Nov 71, Author's Certificate No 317977, Division G, filed 26 Feb 70,
published 19 Oct 71, p 167

Translation: This Author's Certificate introduces a digital accelerometer which contains a sensing element with moment and position pickups, and an amplifier with its input connected to the position pickup, while the output is connected to the moment pickup through a series circuit comprised of a pulse-duration modulator and a feedback pulse shaper. The device also contains a pulse generator connected through a switch to a counter. As a distinguishing feature of the patent, accuracy is improved by including a comparison unit connected to the amplifier output, and a control unit whose output is connected to the controlling input of the switch. One input of the control unit is connected to the output of the comparison unit, and the other is connected to the modulator output.

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USSR

UDC 591.147:591.5

KIRSHENBLAT, Ya. D., Chief of the Department of Normal Physiology,
Chernovtsy Medical Institute

"Ecological Endocrinology"

Moscow, Priroda, No 2, 1972, pp 9-19

Abstract: This article examines the morphological and functional changes produced by the neurosecretory cells of the hypothalamus, and by the hormones of the hypophysis, thyroid, adrenal cortex, and sex glands. Neurosecretions are low molecular weight polypeptides which act as inhibiting or releasing factors in the production of hormones in the frontal lobe of the hypophysis, which in turn stimulates several peripheral endocrine glands. In vertebrates the endocrine glands are regulated not only by the hypothalamus, but also by hormone-producing cells in other glands which are stimulated by the secretions of both sympathetic and parasympathetic nerve fibers. Whereas nerve impulses produce short-term changes in the functions of an organism, hormones generally can bring about serious morphological and functional changes: molting, metamorphosis, pupation. The adaption of vertebrates, insects, and crustaceans to long-term environmental changes occurs in conjunction with the activation or retardation of the endocrine glands. The initial

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USSR

UDC: 537.312.62

KIRSHENINA, I. I., FEDOTOV, L. K.

"Temperature Dependence of Electrical Resistance of Ti-Nb and Ti-Nb-Zr Superconducting Alloys Treated by Hydrostatic Pressure"

Moscow, Sverkhprovodyashchiye splavy i sovedin.--sbornik (Superconducting Alloys and Compounds--collection of works), "Nauka", 1972, pp 115-121 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D562 [résumé])

Translation: Treatment with hydrostatic pressure up to 15 kbar raises the superconductive transition point in certain alloys of titanium with niobium by 1-1.3 K (10-15%). Adding 0.4% Fe to a type 35ET Ti-Nb-Zr alloy increases the T_c by 1.4-1.6 K. The investigated alloys showed a zero or negative coefficient of resistance at temperatures above the T_c , indicating a semiconductor type of conduction. Two illustrations, two tables, bibliography of six titles.

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USSR

UDC 669.296.5.294.537.311.3.669.98

FEDOTOV, L. N., KIRSHENINA, I. I., ZARUBINA, O. A.

"Electric Resistance of Zirconium-Tantalum Alloys Under Hydrostatic Pressure"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 156-160. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 1793 by the authors).

Translation: The electric resistance is studied as a function of hydrostatic pressure of up to 15 kbar for alloys of Zr with 1.84 and 2.7 at.% Ta, near the $\alpha \rightarrow \beta$ conversion boundary. In annealed specimens, a change was observed in the slope of the R(P) curves in the 4-6 kbar area for the alloy Zr-2.7 at.% Ta and in the 8-10 kbar area for the alloy Zr-1.84 at.% Ta. A decrease was noted in the resistance after removal of the pressure in comparison with its initial value both in hardened and in annealed specimens of Zr-Ta alloys, which is related to the formation of the ω phase. The results produced are compared with the results of measurement of R(P) for Ti-Nb alloys. 7 figs; 1 table; 4 biblio refs.

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USSR

UDC 532.111:537.311.31:669.296'.294

FEDOTOV, L. N., KIRSHENINA, I. I., and ZARUBINA, O. A.

"Resistivity of Zirconium-Tantalum Alloys Under Hydrostatic Pressure"

Problemy Sverkhprovodyashchikh Materialov [Problems of Superconducting Materials — Collection of Works], Moscow, Nauka Press, 1970, pp 156-160

Translation: The dependence of resistivity on hydrostatic pressure up to 15 kbar is studied for alloys of Zr with 1.84 and 2.7 at.% Ta, near the $\alpha \rightarrow \beta$ transition boundary. In annealed specimens of the alloys, a change in the slope of the $R(P)$ curves was observed in the 4-6 kbar area for the alloy Zr - 2.7 at.% Ta and at 8-10 kbar for the alloy Zr - 1.84 at.% Ta. A decrease in resistance after removal of pressure in comparison with the initial value was noted both for hardened and for annealed specimens of Zr-Ta alloys, which is related to the formation of the ω phase. The results produced are compared with the results of measurement of $R(P)$ for Ti-Nb alloys.

7 figures; 1 table; 4 biblio. refs.

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USSR

BALOSHIN, O. N., VLADIMIRSKIY, V. V., DUKHOVSKOY, I. A., KISHKURNO, V. V.,
KRYTENKOVA, A. P., KULIKOV, V. V., NIKOLAYEVSKIY, YE. S.,
PETRUKHIN, V. N., RADKEVICH, I. A., and FEDORETS, V. S., Institute of
Theoretical and Experimental Physics of the State Committee for the Use of
Atomic Energy

"Study of the Reaction $\pi^- p \rightarrow p\bar{K}^0$ at a Momentum of 3.25 GeV/c With
a High Momentum Transfer"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 131-133

Abstract: The authors investigate the spectrum of missing masses of a
proton in the reaction $\pi^- p \rightarrow p\bar{K}^0$ for high transfer momentums using
a track spectrometer with optical spark chambers in a magnetic field. They
found the momentum of the primary π^- mesons to be 3.25 GeV/c, and they
measured the differential cross section of the formation of the \bar{K}^0 meson
in the range of angles $-1 \leq \cos \theta^* \leq -0.0005$, which was found to be
equal to $28.2 \pm 9.8 \mu\text{barn/sterad}$. Figure 1 shows the spectrum of the
missing masses in this reaction for a momentum of the π^- meson of 3.25
GeV/c. Figure 2 shows the cross section of the creation of the \bar{K}^0 meson
backwards in the reaction $\pi^- p \rightarrow p\bar{K}^0$ as a function of the momentum
of the π^- mesons. The article contains 2 figures and 5 bibliographic
entries. 1/1

USSR

UDC: 536.463+662.311.1

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KIRSINOVA, Z. V., LEYPUNSKIY, O. I.

"Study of Mechanical Stability of Hot Cracks in Powder"

Novosibirsk, Fizika Goreniya i Vzryva, No. 6, March 1970, pp 72-80

Abstract: The stability of cracks is analyzed in the case when the loads pulling the crack apart are created by excess pressure within the crack, for example that resulting from the flow of gas combustion products leaving the crack. The increased pressure, pushing the gas out of the crack, can lead to rupture and further propagation of the crack. The area of crack sizes retaining stability when the internal surface burns is determined. The critical crack propagation rate is defined. Propagation at lower rates leads to self-stabilization of the crack. It is assumed as the results are presented that the combustion and extension of the cracks do not change the properties of the material. The boundaries of the area of stability and conditions of self-stabilization are determined when there are tensile stresses in the material.

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USSR

KIRSO, U. E., and MAZIK, I. KH.

"The Relation Between the Toxicity of Phenols and Their Structure"

Tr. In-ta eksperim. i klinich. med. M-va zdavookhr. EstSSR (Works of the Institute of Experimental and Clinical Medicine of the Ministry of Health Estonian SSR), 1970, 3, pp 177-183 (English summary) (from RM-Biokhimiya Khimiya, No 2, 25 Jan 71, Abstract No. 2F2088 by A. IGONAT'YEV)

Translation: The toxicity of xylenols for mice, rats and rabbits is similar and is quantitatively determined by the structure of the particular phenol with the help of the Hammett-Taft equation. Values of substituent constants are of great importance in this connection.

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Steels

USSR

UDC 621.643.411.4.62-192

MOISEYEV, A. A., Candidate of Technical Sciences, SUKHAREVA, V. D., Engineer, ZEMZIN, V. N., Doctor of Technical Sciences, KHITRIK, A. I., Candidate of Technical Sciences, MOSHKEVICH, Ye. I., Candidate of Technical Sciences, KOROBOCHKIN, I. Yu., Candidate of Technical Sciences, KIRVALIDZE, N. M., Candidate of Technical Sciences, PISHCHIKOV, G. P., Candidate of Technical Sciences, DEVIATKO, E. I., Engineer, All-Union "Order of the Red Banner of Labor" Scientific Research Institute of Heat Engineering imeni F. E. Dzerzhinskiy, Central Scientific Research Design and Planning Boiler and Turbine Institute imeni I. I. Polzunov, Road Construction Division, Southern Pipe Plant, All-Union Scientific Research Diesel Locomotive Institute

"Improving the Operational Reliability of Welded Joints and the Technological Properties of High-Strength EP184 Austenitic Steel"

Moscow, Teploenergetika, No 8, Aug 72, pp 46-49

Abstract: The article is a report on the results of joint research by various scientific research institutes and industrial organizations to determine what effect methods of melting EP184 steel might have on the work-

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MOISEYEV, A. A. et al., Teploenergetika, No 8, Aug 72, pp 46-49

ing reliability of welded joints as well as on the other properties of the metal. It was found that crack formation in joints can be eliminated by reducing the oxygen content, as well as the concentrations of hydrogen, nitrogen, sulfur and phosphorus below certain levels. This can be done by melting from a fresh charge with subsequent vacuum-arc remelting. Electroslag remelting can be used as well, but is less effective.

Acc. Nr: **AP0036824**

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 95-98

AUTOINFECTION IN HOMOLOGOUS DISEASE IN HYBRID MICE

Shevelev, A. S.; Fedosov, Ye. A.; Kirvel', M. M.

A regular autoinfection caused by bacteria of the normal intestinal microflora was seen at the late stages of homologous disease developing as a result of reaction of the transplant against the hosts in hybrid mice. Homologous disease was induced by intravenous injection to nonirradiated hybrids (CBA x C57BL/6/F₁), weighing 15 to 18 g, of live parent cells of the spleen obtained from mice C57BL/6. The dose was 110-120 million cells. The animals were sacrificed at various periods after the injection of parent cells; blood, mesenteric lymph nodes, liver and spleen samples were planted on culture media. Bacterial cultures from the organs and blood proved to be positive only in 6% of control intact hybrids. In experimental hybrids killed 5, 10, 15, 25 and 30 days after the transplantation the percentage of positive cultures constituted correspondingly 8, 12, 56, 60 and 72. Of the cultures isolated 87.7% were E. coli, 11.5% — E. paracoli, and 1.8% — were various species of Proteus.

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UDC 51:155.001.57:612.82

KIRVELIS, D. S.

"Hypothesis Concerning Structure of Primary Processes in the Visual System"

Sovrem. Probl. Kibernet. [Modern Problems of Cybernetics -- Collection of Works], Moscow, Nauka Press, 1970, pp 251-262 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 Y602 by the author).

Translation: A hypothetical representation of the process of recognition of simple achromatic patterns placed in the field of simultaneous perception (not exceeding angle of 10°) is analyzed. The study of the psychology of visual perception of anatomical and morphological data and electrophysiological studies, considering a number of theoretical decisions on pattern recognition, led to the following hypothetical structure of the visual system: 1. Existence of a "sensory screen" -- a structure on which the pattern is projected using a neutron "tongue." 2. Analysis of the image and preliminary prediction of a pattern, i. e., separation of simple and complex local characteristics, production of nonlocal characteristics and classification. 3. Reverse reproduction of the image on the "screen" according to the data of preliminary prediction. 4. Merging of the projected image with the reproduced image, adjustment of the reproduced image, final recognition in case of correspondence or search for a new preliminary pattern in case of noncorrespondence. 68 biblio refs.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STABILITY OF LEAD BASED BINARY ALLOYS IN SULFATE SOLUTION -U-
AUTHOR-(04)-DUNAYEV, YU.O., TSKHE, L.A., BUNDZHE, V.G., KIRYAKOV, G.Z.
COUNTRY OF INFO--USSR
SOURCE--ZASHCH. METAL. 1970, 6(2), 237-9
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--LEAD ALLOY, TIN ALLOY, BISMUTH ALLOY, SOLID SOLUTION,
CORROSION RATE, ANTIMONY ALLOY, SULFATE, AQUEOUS SOLUTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/1045 STEP NO--UR/0365/70/006/002/0237/0239
CIRC ACCESSION NO--AP0138067
UNCLASSIFIED

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CIRC ACCESSION NO--AP0138067

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION OF PB-SB, PB-SN, AND PB-BI ALLOYS IN 2N H SUB2 SO SUB4 AT ROOM TEMP. WAS INVESTIGATED. TEH PHASE DIAGRAMS AND DEPENDENCES OF THE INITIAL AND STATIONARY POTENTIAL OF THE ALLOYS ON THEIR COMPN. ARE GIVEN IN FORM OF DIAGRAMS. THE CORROSION PROPERTIES OF MATERIALS DEPEND, TO A GREAT DEGREE, ON THEIR STRUCTURE; THE CORROSION RATE OF HYPEREUTECTIC ALLOYS RAPIDLY INCREASES WITH THE CONCN. OF A 2ND COMPONENT, WHEREAS THE HYPDEUTECTIV ONES SHOW LITTLE CORROSION SLIGHTLY DEPENDING ON THE AMT. OF THE 2ND COMPONENT. THE CORROSION RESISTANCE OF THE PB BASED SOLID SOLNS. FOLLOWS THE TAMMANN LAW. FACILITY: INST. KHIM. NAUK., ALMA-ATA, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF SURFACE ACTIVE AGENTS ON THE HYDROGEN ION DISCHARGE
REACTION ON ZINC, COPPER, AND ANTIMONY ELECTRODES IN SULFURIC ACID
AUTHOR--(02)-KIRYAKOV, G.Z., BRANDT, A.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 70-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN ION, SURFACE ACTIVE AGENT, ELECTRODE POTENTIAL,
SULFURIC ACID, COPPER, ANTIMONY, ZINC, ELECTRODE DESIGN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1264 STEP NO--UR/0360/70/020/002/0070/0072
CIRC ACCESSION NO--AP0136670
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF SOME SURFACE ACTIVE ACETYLENE DERIVS. (ESP. THOSE WITH UNSYM. STRUCTURE) TO 2N H SUB2 SO SUB4 SOLNS. IS FOLLOWED BY AN INCREASE OF H OVERVOLTAGE ON CU AND SB CATHODES AT 25DEGREES. THE H OVERVOLTAGE ON ZN REMAINS PRACTICALLY UNCHANGED. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DEPOSITION OF ZINC FROM ACID SULFATE SOLUTIONS ON TITANIUM CATHODES
-U-
AUTHOR--(03)--BUNDZHE, V.G., DUNAYEV, YU.D., KIRYAKOV, G.Z.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK KAZ. SSR. SER. KHIM. 1970, 20(2), 73-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TITANIUM, METAL ELECTRODE, TITANIUM HYDRIDE, ZINC PLATING,
METAL DEPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1495 STEP NO--UR/0360/70/020/001/0073/0075
CIRC ACCESSION NO--AP0125123
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125123

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ZN WAS DEPOSITED ON TI ELECTRODES FROM SOLNS. CONTG. ZN 60 AND H SUB2 SO SUB4 100 G-L. AT 25, 40, AND 60DEGREES AND C.DS. OF 40-4000 A-M PRIME2. FOR COMPARISON, ZN WAS ALSO DEPOSITED ON AL CATHODES. THE CURRENT EFFICIENCY ON THE AL CATHODE WAS HIGH UNDER ALL TESTED CONDITIONS, WHEREAS ON TI CATHODES A GOOD EFFICIENCY WAS OBTAINED ONLY AT SIMILAR TO 2000 A-M PRIME. ZN PPT. WAS DEPOSITED ON TI ONLY AT LOW TEMPS., BUT EVEN AT 25DEGREES, THE DEPOSITION OF ZN COULD STOP AND THE ALREADY DEPOSITED ZN BEGIN TO DISSOLVE. THIS WAS ATTRIBUTED TO THE FORMATION OF TI HYDRIDE, THE FORMATION OF WHICH IS FAVORED BY INCREASING TEMP. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

Parasitology

USSR

UDC: 576.895.775

KIR'YAKOVA, A. N., KOPTSEV, L. A., and KOPTSEVA, Z. G., All-Union Order of Labor Red Banner Scientific Research Antiplague Institute "Mikrob" and the Saratov and Karakalpakskaya Antiplague Stations, Nukus

"Number of Annual Generations of Fleas of the Genus *Xenopsylla* in Northern Kyzyl-kum"

Leningrad, Parazitologiya, Vol 4, No 6, Nov/Dec 70, pp 528-536

Abstract: A study was conducted to determine the life cycle and number of generations per year in *Xenopsylla hirtipes* and *Xenopsylla conformis* fleas the principal plague vectors. The object of the study was to determine the reason for the periodicity of epizootic outbreaks of plague, which occur in the spring, decline in the summer, and increase again in the fall but with lesser intensity than in the spring. This periodicity is explained on the basis of changes in generations. The old fleas die in the spring, while the emerging new population which has matured during the winter months has not as yet been infected by plague bacteria. By fall, the young fleas have received the pathogen, and the epizootic outbreak of the disease is resumed. Fleas for the study were gathered from

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USSR

KIR'YAKOVA, A. N., et al, Parazitologiya, Vol 4, No 6, Nov/Dec 70, pp 528-536

gerbils in all phases of their development and during all seasons of the year. Laboratory and field studies showed that Xenopsylla fleas are univoltine, with a single generation per year (from June or July of one year to the same period in the next year). These results also reflect the natural sequence of the rodents and the bacteria expressed in the triad: rodent -- flea -- plague bacteria.

2/2

- 23 -

KIRYANOV A.I.

Acc. Nr.: ANO104123

Ref. Code: 2189003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. ALPEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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Reel/Frame
19870555

Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUS, KO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIR, YANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALINPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLAToust METALLURGICAL PLANT.

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Reel/Frame
19870556

KZ

USSR

UDC: 8.74

KIR'YANOV, B. F., MARCHENKO, T. V., SKREBNEV, A. A., KHABIBULLIN, N. F.

"On the Problem of Generating Pseudorandom Numbers by a Shift Register With Logic Feedback"

Tr. n.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo (Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1971, vyp. 8, pp 94-101 (from RZh-Kiber-
netika, No 6, Jun 72, Abstract No 6V501)

[No abstract]

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USSR

UDC 621.039.51.001.8 4

ARNOL'DOV, M. N., BOGATYREV, V. K., DUBOVSKIY, B. G., IVANOVSKIY, M. N.,
KALENICH, V. N., KIR'YANOV, G. I., MILOVIDOVA, A. V., FROLOV, V. V.

"Activation Control of Oxygen in Circulating Sodium-Potassium Coolant Using
a Neutron Generator"

Tr. VNII radiats. tekhn. (Works of the All-Union Scientific Research Insti-
tute of Radiation Engineering), 1972, No. 7, pp 137-144 (from RZh-50. Yadernyye
reaktory, No 11, Nov 72, Abstract No 11.50.93)

Translation: The first stage in carrying out continuous control of oxygen in a
circulating loop with an Na-K alloy and a mockup of a nuclear reactor circuit
is described. The basis of the method is the familiar reaction for deter-
mining oxygen on the basis of N^{16} (the reaction $O^{16} (n, p) N^{16}$). A small-
scale neutron generator of the type NGI-5 with a flux of about $5 \cdot 10^8$ neutron/
/sec was used for activation. This method for oxygen control on the basis of
the N^{16} isotope is also applicable in the active loop of a nuclear reactor.
4 ill., 2 tables, 2 ref.

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USSR

UDC 621.039

KIR'YANOV, G. I., ALLAKHVERDOV, A. Sh., GUSEV, A. V., and KOLGANOVA, I. V.

"Development of a Pulsed Neutron Generator to Study Reactors"

Tr. VNII radiats. tekhn. (Works of the All-Union Scientific Research Institute of Radiation Technology), 1970, No 5, pp 265-274 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V583)

Translation: A neutron generator was developed with a mean neutron flux of 10^7 neutron/sec with a pulse repetition rate of up to 20 Hz and a pulse width of ~ 1.5 μ sec. The length of the neutron source is 1100 mm and the diameter is 48 mm. Measurement of the operating stability of the generator showed that in 2 hours of operation the maximum deviation of the output of neutrons from the mean value did not exceed 8%. O. V. Sh.

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USSR

UDC 577.391:547.476

GROZDOV, S. P., BEZIN, G. I., KENDYSH, I. N., KIR'YANOV, I. Yu., and
VASIL'YEVSKAYA, V. V., Institute of Biophysics, Ministry of Health USSR,
Moscow

"Mechanism of the Physiological Action and of the Radiation-Protective
Effect of Dimethylsulfoxide"

Moscow, Radiobiologiya, Vol 11, No 4, Jul/Aug 71, pp 522-527

Abstract: Dimethylsulfoxide (DMSO), on being administered intraperitoneally to rats in the form of a 50% aqueous solution in a dose of 5.4 g/kg before irradiation of the animals with gamma-rays in a dose of 900 r, exerted a pronounced radiation-protective effect, which was considerably enhanced by the administration of ATP. DMSO reduced the action of corticosteroids on tissues, although it increased their secretion in the organism. Reduction of the utilization of O_2 , inhibition of glycolysis, and other effects indicated inhibition of metabolic processes in lymphoid tissues (the spleen and thymus) under the action of DMSO. As distinguished from other radiation protectors, DMSO did not produce hypoxia, increase the content of SH groups, or lower the redox potential in tissues. Differences between the mechanism of action of DMSO and that of aminothiols explain the enhancement of the
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USSR

GROZDOV, S. P., et al., Radiobiologiya, Vol 11, No 4, Jul/Aug 71, pp 522-527

radiation-protective effect upon their joint application. As indicated by the results of the experiments with ATP, this enhancement will presumably also be observed on joint administration of DMSO with other substances which, similarly to aminothiols, displace the redox balance of the organism towards reduction.

2/2

- 20 -

USSR

UDC: 621.317.757(088.8)

KIR'YANOV, K. G.

"A Device for Measuring the Degree to Which Frequency Responses are Identical"

USSR Author's Certificate No 264539, filed 1 Feb 68, published 24 Jun 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A370 P)

Translation: A device is proposed for measuring the degree to which the frequency responses of linear systems are identical. The unit contains a noise generator and an oscillograph. The device is simplified by connecting the noise generator to the inputs of the systems to be compared, while the outputs of these systems are connected to the "X" and "Y" inputs of the oscillograph, which operates in the slave sweep mode with stable trigger level. The degree to which the frequency responses are identical is determined by the magnitude of a vertical brightness pip formed on the oscillograph screen at the instant when the horizontal sweep is triggered. The device gives an integral evaluation of the degree to which responses are identical, accounting for coincidence of both amplitude and phase-frequency responses. E. L.

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AA0043358

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243667 MEASURING TRANSIENT PULSE CHARACTERISTICS OF

LINEAR CIRCUITS involves connecting a noise generator to the investigated circuit and to a circuit which provides scanning pulses of an oscilloscope. The output from the investigated circuit is applied to the oscilloscope. The scanning pulses operate at the time when the input signals reach a predetermined level.

11.2.65 as 963661/26-9 K. G. KIR'YANOV (1.10.69.) Bul 17/
14.5.69. Class 21a⁴. Int. Cl. G 01 r.

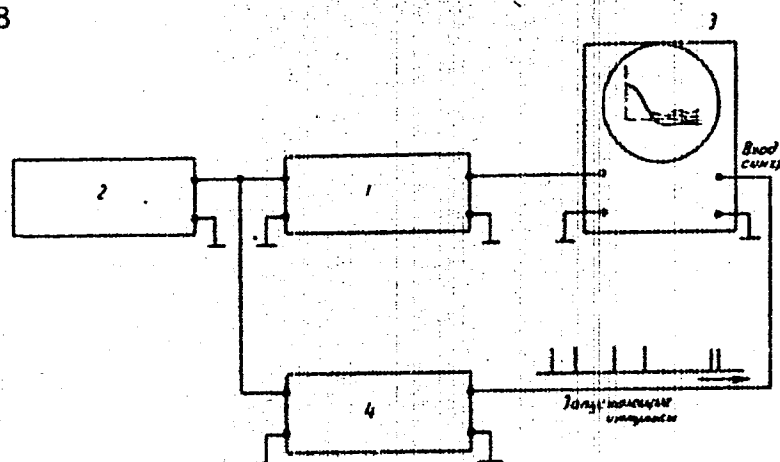
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KIR'YANOV, V.A.

SRK 56465
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The total lung capacity (TLC) for both cosmonauts on the fourth day after landing was greater than the initial level by 322 ml for A. G. Nikolayev and by 342 ml for V. I. Sevast'yanov. On the 11th day the TLC was close to the pre-flight level. The TLC changes were for the most part caused by an increment in the residual volume (RV), which increased for A. G. Nikolayev and V. I. Sevast'yanov by 272 and 245 ml respectively. By the 11th day the RV was virtually comparable to the preflight level; the HV/VOL ratio, expressed in percent, increased on the fourth day in comparison with the pre-flight levels for A. G. Nikolayev and V. I. Sevast'yanov by 2.56% and by 2.57%, but by the 11th day this difference had decreased only 1.07% and 1.53% respectively. Measurements of the functional residual capacity (FRC) varied in different directions. On the fourth day there was a small increase in the vital capacity of the lungs.

Pulmonary volumes and the uniformity of ventilation for A. G. Nikolayev and V. I. Sevast'yanov were studied by the open system method based on the exhalation of nitrogen from the lungs when breathing pure oxygen. The investigations were made in the mornings, while fasting, prior to onset of the 18-day flight and on the fourth and eleventh days after its termination. In order to exclude the influence of terrestrial gravitation on blood redistribution in the body the investigations were made in a water medium at the time of body immersion up to the neck level. All the data were reduced to NTPS.

Article by V. A. Andreev and V. A. Kir'yanov; Moscow, Akademiya Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Moscow, 1971, pp 6-7.

PULMONARY VOLUMES AND UNIFORMITY OF VENTILATION OF TWO COSMONAUTS DURING AN 18-DAY SPACE FLIGHT

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THEORY OF THE DOUBLE LAYER AT THE METAL SOLUTION INTERFACE IN THE
PRESENCE OF THE ADSORPTION OF DIPOLAR CAPILLARY ACTIVE SUBSTANCES. 1.
AUTHOR--(03)-KIRYANOV, V.A., KRYLOV, V.S., DAMASKIN, B.B.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKIMIYA 1970, 6(4), 533-41
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--METAL, AQUEOUS SOLUTION, ADSORPTION, DIPOLE MOMENT, ISOTHERM,
MOLECULAR STRUCTURE, VAN DER WALLS FORCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1127 STEP NO--UR/0364/70/006/004/0533/0541
CIRC ACCESSION NO--AP0121686
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KNOWING THE DISCRETE MOL. STRUCTURE OF THE ADSORBED LAYER AT A METAL SOLN. INTERFACE, THE ADSORPTION ISOTHERMS AND DIFFERENTIAL CAPACITY CURVES WERE CALCD. FOR SYSTEMS WITH EITHER DIPOLE DIPOLE OR VAN DER WAALS INTERACTION. THE INTERACTION EFFECTS OF THE DIPOLE MOMENTS OF THE ADSORBED SPECIES WITH THE METAL OR THE SOLN. WERE ALSO CONSIDERED. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ADSORPTION ISOTHERM AND DIFFERENTIAL CAPACITY OF A DOUBLE LAYER AT
THE METAL SOLUTION INTERFACE IN THE CASE OF THE CHEMISORPTION OF DIPOLAR
AUTHOR--(02)-KIRYANOV, V.A., KRYLOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 412-14

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMODYNAMICS, ADSORPTION, SURFACE ACTIVE AGENT, AQUEOUS
SOLUTION, THIOUREA, SODIUM COMPOUND, FLUORIDE, ISOTHERM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PRUXY REEL/FRAE--1994/1939

STEP NO--UR/0364/70/006/003/0412/0414

CIRC ACCESSION NO--AP0115747

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115747

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE THEORY OF DISCRETE DIPOLAR LAYER AT THE METAL SOLN. INTERFACE, REGULARITIES IN ADSORPTION OF THE SURFACE ACTIVE SUBSTANCES, WHICH INCREASE THE CAPACITANCE OF A DOUBLE LAYER, ARE CONSIDERED. AN EXAMPLE, IN WHICH ADSORPTION OF DIPOLAR CAPILLARY ACTIVE SUBSTANCES LEADS TO THIS INCREASE, APPEARS TO BE THE SYSTEM HG-AQ. SOLN. OF THIUREA CONTG. NAF. IN THE PRESENT PAPER, A CONCLUSION, BASED ON STATISTICAL THERMODYNAMICS CONCERNING THE ADSORPTION OF CAPILLARY ACTIVE SUBSTANCES IS DRAWN. A FORMULA WHICH DEFINES DIFFERENTIAL CAPACITY OF THE DOUBLE LAYER IS DERIVED.

FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 531.7+621.317

VEDERNIKOV, V. M., KIR'YANOV, V. P., KLISTORIN, I. F., and KOKSHAROV, N. A.

"Principles of the Construction of Computing Devices in Laser Displacement Meters"

Novosibirsk, Avtometriya, No 3, 1973, pp 46-52

Abstract: The laser displacement meter is defined as consisting of two units -- a laser interferometer with photoelectric converters, and a computing unit -- and is used to determine dimensions, displacements, velocities, and other physical quantities. The purpose of this paper is to examine the basic principles in the construction of the computer unit in this instrument, analyze its characteristics, and determine the most typical of its areas of applicability. The analysis begins with a discussion of the basic problem in the design of this unit, which is the conversion of the interferometer's output signals into digital form, involving also the representation of the measurement results in an acceptable system of units and the introduction of corrections for the deviations from the normal measurement conditions. The basic structural set-up of the computer unit and the way it realizes its operations are also concerned.

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USSR

UDC 616.928.8-022.39:636.2]-036.21-078.7

SOMOV, G. P., SHUBIN, F. N., KIR'YANOV, Ye. A., and MAMONTOVA, R. M., Vladivostok
Institute of Epidemiology and Microbiology, and Primorskiy Kray Veterinary-
Bacteriological Laboratory

"Serological Examination of Cattle as a Method for Detecting Natural Foci of
Tsutsugamushi Fever"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973,
pp 63-66

Abstract: Blood serum of 586 head of cattle from southern Primorskiy Kray was tested for the presence of Rickettsia tsutsugamushi antigen to determine the usefulness of serological data as indexes describing natural tsutsugamushi fever foci, and calves were subjected to various experiments to identify their role in natural circulation of the pathogen. Antibody production dynamics of cattle in the spring-fall period coincided with those of healthy humans residing in the same areas, thus indicating that serological data are valid for determining the boundaries of natural foci. In the first experiment calves were infected subcutaneously and intravenously with R. tsutsugamushi. While intravenous injection did not cause rickettsemia and lymphadenites to appear, with subcutaneous injection infiltrates, lymphadenites, and rickettsemia arose within the 1st 10 days, for the most part localized about the area of injection.

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USSR

SOMOV, G. P., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii,
No 2, 1973, pp 63-66

Rickettsemia lasted 7-10 days and arose earlier in local lymph nodes than at those located opposite the point of injection. Responses were even more rapid when the pathogen was injected directly into lymph nodes. These results suggest that in nature the pathogen undergoes initial reproduction in the skin and in lymph nodes close to the point of infection. In all cases specific complement-fixing antibodies were detected by the 7th day, maximized on the 14th, and were practically absent after 2 months. In the next experiment larvae of Trombiculae ticks were allowed to feed on calves to determine whether or not ticks might transmit the disease to cattle. *L. pavlovskiyi*, *N. japonica*, and *N. mitamurai* larvae did manage to attach and feed. Since these ticks have been shown to be natural carriers of the disease, it is most probable that these species do transmit the disease to cattle. Whether or not uninfected larvae can become infected by feeding on infected cattle remains to be studied.

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USSR

UDC 619:616.988.73:636.5

TSIRO, V. A., Candidate of Veterinary Sciences, DMITRIYEV, P. V., KIR'YANOV, YE. A., and DENISENKO, R. A., Veterinary Physicians

~~SECRETED/CONFIDENTIAL~~

"Bird Ornithosis Outbreak"

Moscow, Veterinariya, No 3, Mar '71, p 64

Abstract: Up to 120 different species of wild birds and farm poultry can contract ornithosis. Migrating birds transmit the disease to poultry. In the Soviet Union, the ornithosis pathogen was first detected in 1948. However, the disease was first recorded among human beings in 1969: personnel in a poultry combine were infected by sick ducks. These ducks had been in contact with pigeons inhabiting the farm and with water fowl inhabiting the neighboring lakes. Bacteriological and virological tests performed on the blood serum and on internal organs of the ducks, pigeons, and water fowl revealed an absence of bacteria and the presence of ornithosis virus. Veterinary therapeutic and preventive measures were taken immediately. The disease was eradicated, and no cases of ornithosis have been recorded since then.

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USSR

UDC 547.944/945

MARGVELASHVILI, N. N., KIR'YANOVA, A. T., and TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal Plants

"Chemical Study of the Alkaloids from *Corydalis Rosea*"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1972, pp 127-128

Abstract: Dichloroethane extraction of the *Corydalis rosea* Leych grass yielded five alkaloids. The strongly basic fraction consisted of protopin which was identified by direct comparison. The main component of the weakly basic fraction, melting at 237° was identified as 1-adlumidine, its racemic mixture melting at $184-186^{\circ}$. The fourth alkaloid isolated was found to be the 1-adlumine, m.p. $179-180^{\circ}$, and the mother liquor from its crystallization contained the fifth product -- dl-adlumine.

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KIR'YANOVA, I. S.

MECHANISMS PRESENTING FOR CONTROLLING LARGE CITY GROWTH

[Article by N.N. LEBYANOV, I.S. Kir'yanova; Moscow, Vestnik Akademii Nauk SSSR, Russian, no. 1, 1972, pp. 20-25]

UFA 5 55380
17224 700
UNCL 614.78

One of the typical manifestations of urbanization in the rapid growth of large cities which overtake the growth rate of other urban settlements (Table 1).

Most large and megapolitan ("giant") cities are concentrated in China, USA, USSR, India, and Japan (Table 2). According to the data of the UN Expert Commission, there is an annual increment of 4 percent in the population of cities with more than one million inhabitants, and in a number of South American, Asian, and African countries it is 8 percent. The increase in population of such cities (30-70% of the total increment) occurs mainly due to migration of rural population because of the absence or shortage of agricultural work and the desire to obtain better paid or guaranteed work. The desire for the convenience or cultural advances of city life plays a considerable part in such migration from rural areas, but many of the new arrivals settle in slum regions poorly adapted for housing or not at all suitable for this purpose. It is precisely in the large and megapolitan cities of capitalist countries that there is sharp exacerbation of class and race distinctions, rise in overall and juvenile crime rate, high incidence of suicides, drug addiction, and alcoholism.

According to the All-Union census (1970), in the USSR there are 33 megapolitan cities and nine of them have a population of more than one million. Thus, the Soviet Union is in first place in the world, with respect to number of large and megapolitan cities, even though it is sixth (after Brazil) in concentration of population in large cities. In the USSR, large cities are undergoing the fastest growth, whereas megapolises have shown stabilization of the increment in population in the last ten years; in Moscow and Leningrad there has been a considerable decline in population (Table 3), and this is definitely related to the systematic tactics with respect to limiting the growth of megapolises.

There are several typical urban development features in large and megapolitan cities. The following are among the distinctions in the planning

USSR

UDC 621.382.3

KIR'YANOVA, V.M., MAKOVYI, A.N., PRAVDINA, T.V., STAROV, V.G., FURSOV, V.V.,
SHCHEVELEV, M.I.

"To The Problem Of The Physical Interconnection Of The Drift Of Certain Parameters
Of Silicon Drift Transistors"

Sb.Tr.po poluprovodnikovym materialam, priboram i kh primeneniyu (Collection Of
Works On Semiconductor Materials, Devices, And Their Application), Voronezh, 1971,
pp 75-80 (from RZh:Elektronika i yeye primeneniye, No 11, Nov 1972, Abstract No
11B255)

Translation: Using two types of silicon drift transistors as an example, the
dependence is studied of the electrical parameters on the dislocation density,
the content of O_2 and the resistivity of the initial Si, and the correlation be-
tween the values of the parameters and their changes in the process of current
aging. 1 tab. 2 ref. V.B.

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USSR

UDC 621.382.3

AKIMOV, M.A., KIR'YANOVA, V.M., KOLESNIKOV, V.G., SHCHEVELEV, M.I.

"Effect Of Dislocation Densities On The Parameters Of Epitaxial-Planar Transistors"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 39-42 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B241)

Translation: The effects were studied of dislocation densities on the breakdown voltage of the collector p-n junctions, the amplification factor with respect to the current, and the reverse current of the collector p-n junction. It is established that with an increase of the dislocation densities from 10^4 to $6 \cdot 10^4 \text{ cm}^{-2}$ the breakdown voltage is decreased and the amplification factor with respect to the current and the reverse current of the collector p-n junction are increased.

Summary.

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1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--MECHANISM OF THE CYTOSTATIC ACTION OF AMINOACRIDINES -U-

AUTHOR--(05)-ZELENIN, A.V., KIRYANGVA, YE.A., LYAPUNOVA, YE.A., MELNIKOVA,
YE.YU., STEPANOVA, N.G.
COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(1), 96-101

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTITUMOR DRUG EFFECT, MITOSIS, PROTEIN SYNTHESIS, NUCLEIC
ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FKAME--1994/1158

STEP NO--UR/0390/70/033/001/0096/0101

CIRC ACCESSION NO--AP0115177

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NU--AP0115177

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 3,6,DIAMINOACRIDINES, INCLUDING ACRIDINE ORANGE, PROFLAVINE, ACRIFLAVINE, EUCRISINE 2, AND CORIPHOSPHINE, WERE CHARACTERIZED BY SIGNIFICANT ANTIMITOTIC ACTION STARTING IN THE 1ST FEW MIN OF THE EXPT., WITH A SHARP PARALLEL NOTED BETWEEN INHIBITION OF MITOTIC ACTIVITY AND PROTEIN SYNTHESIS, AND DELAYED PASSAGE OF CELLS THROUGH THE MITOTIC G SUB2 PERIOD. ACRICHINE AND RIBOFLAVINE ANTIMITOTIC ACTIONS APPEARED ONLY SEVERAL HR AFTER THE START OF THE EXPT. AND WERE NOT ACCOMPANIED BY EFFECTS ON PROTEIN SYNTHESIS OR BY ANY CHANGE IN THE G SUB2 PERIOD OF THE CYCLE. ANTIMITOTIC ACTIVITY OF THE 3,6,DIAMINOACRIDINES APPARENTLY INVOLVES DIRECT INHIBITION OF PROTEIN SYNTHESIS, WHILE THE 2ND GROUP OF COMPS. INTERFERES WITH NUCLEIC ACID SYNTHESIS. FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

Entomology

USSR

K UDC 576.895.77(571.65)

POLYAKOVA, P. Ye., GOMOYUNOVA, N. P., KIR'YASHKINA, I. A., and LEVINA, L. F.
Biological Institute, Siberian Branch of the Academy of Sciences USSR,
Novosibirsk

"Blood-Sucking Mosquitos (Diptera, Culinae) of the Omolon River Basin"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, Vol 1, No 5, Apr 70, pp 93-98

Abstract: The phenology of imago and mature phases of mosquitoes and their larvae was studied in the basin of the middle section of the Omolon river. It was a rainy summer in 1968, and the mean temperature was 13.3°C. Only rarely was there a warm day with a temperature of up to 26°C. Seventeen mosquito species were studied, including their distribution and swarming in May-August. The mosquitoes attacked man in daily cycles. The greatest activity was observed during the morning and evening hours. Swarming of the species *A. communis* and *A. pullatus* takes place in the evening hours, and of *A. nigripes* in the daytime. Swarming lasts several hours, particularly in quiet weather at an atmospheric temperature of 8.5-16.5°C, and at a relative humidity of 77-85 percent.

1/1

50: JPRS 89879
14 June 73

STUDY OF THE GROWTH CONDITIONS AND PROPERTIES OF SILICON FILMS DEPOSITED BY THE CHLORIDE METHOD

Article by G. I. Mir'yashina, D. I. Blonov, V. N. Pavlov, Yu. V. Galim-
skaya, H. G. Gerasova, M. L. Zorina, N. N. Zin'kova, Novosibirsk, Faculty
of the Siberian Mathematical Institute, N. S. Novosibirsk, Faculty
of Science, Novosibirsk, Novosibirsk State University, Novosibirsk
Russia, Part 2, 1969, pp. 62-63

Polymerizable semiconducting films are of limited interest. The intermolecular barriers among a high specific resistance (ca. 10^6 ohm-cm) of the silicon film serves as insulating in the integrated circuit, and the surface roughness permits the creation of a stable contact which, in the latter for certain types of diodes. On the other hand, the low deposition temperature by comparison with the epitaxial growth, facilitates the realization of the multilayered semiconducting structures during the first period after significant reduction of the substrate diffusion from the substrate.

Below, there is a discussion of the results of studying the effect of the technological conditions of the polycrystalline silicon film growth on their electrophysical parameters.

Procedure for Obtaining and Studying Melted

The allene films were obtained by the chloride method [4-6] in the horizontal open tube with an electric furnace as the heater. The temperature of the furnace was 1000°C. The reaction mixture was a mixture of molten quartz and polycrystalline graphite as shown in Figure 25. The substrates made of quartz were placed in two parallel rows in the definition zone. The thermocouples were placed in two structural locations: one with a reactor diameter of about 20 mm; the other, the evaporator with the steel, usually passed a flow of 20 liters/hour, and 10 liters/hour went through the evaporator with Bf_3 .

The thickness of the grown layers of silicon was estimated by the gravimetric method. A study was also made of the electrophysical, the optical and structural properties of the films.

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PROSPECTS FOR USING LOW TEMPERATURES IN POWER ENGINEERING -U-

AUTHOR-(03)-SYCHEV, V.V., KIRYENIN, I.A., GERSHENKROY, V.L.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR: ENERGETIKA I TRANSPORT, NO
1, 1970, PP 35-45

DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), PHYSICS, ELECTRONICS
AND ELECTRICAL ENGR.

TOPIC TAGS--CRYOGENIC ELECTRONICS, ELECTRIC POWER TRANSMISSION,
SUPERCONDUCTIVITY, TRANSMISSION LINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1328

STEP NO--UR/0281/70/000/001/0035/0045

CIRC ACCESSION NO--AP0123286

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123286

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PROBLEMS ASSOCIATED WITH THE ESTABLISHMENT OF SUPERCONDUCTING AND CRYOGENIC ELECTRIC TRANSMISSION LINES ARE DISCUSSED. ADEQUATE ATTENTION IS GIVEN TO TYPE OF CURRENT AND LINE DESIGN (CABLES). SPECIAL ATTENTION IS PAID TO TECHNICO ECONOMIC AND PHYSICO TECHNICAL PROBLEMS WHICH PLAY A DETERMINING ROLE IN THE DESIGN AND PLANNING OF SUPERCONDUCTING AND CRYOGENIC LINES. A DESCRIPTION IS GIVEN OF THE CRYOGENIC CIRCUITS WHICH CAN ENSURE THE PRECOOLING OF CABLES AND MAINTAIN THEIR OPERATING TEMPERATURE DURING OPERATION. AN ANALYSIS IS MADE OF THE PROSPECTIVE DEVELOPMENT OF ELECTRIC MACHINES (MOTORS AND GENERATORS) WITH SUPERCONDUCTING WINDINGS AND OF SUPERCONDUCTING ENERGY STORING DEVICES.

UNCLASSIFIED

Radiation Chemistry

USSR

UDC 541(64+8):547.281.1

KIRYUKHIN, D. P., KAPLAN, A. M., BARKALOV, J. M., GOL'DANSKIY, V. I., Institute of Chemical Physics of the USSR Academy of Sciences

"Study of the Mechanism of Radiation Polymerization of Solid Formaldehyde"

Moscow, Vysokomokulyarnyye soyedineniya -- Vol 14, No 10, 1972, pp 2115-2119

Abstract: A study was made of the radiation solid phase polymerization of formaldehyde using the calorimetric procedure which permits direct observations of the polymerization kinetics by the heat release (A. M. Kaplan, et al., Khimiya vysokikh energiy, No 3, 460, 1969; D. P. Kiryukhin, et al., Vysokomolek, soyed., No B12, 491, 1970; I. M. Barkalov, Kinetics and Mechanism of Polymerizations, Vol VI, Budapest, 850, 1971) Chain polymerization takes place in solid formaldehyde at 15-140°K. The chain nature of the process proves the very high radiation yields ($G(-M) \approx 10^3$ at 15° K). The chain processes were observed at such low temperatures for the first time. The temperature dependence of the polymerization rate of the formaldehyde corresponds to the formal activation energy of 2 ± 0.6 kcal/mole for the 80-140° K interval. At lower temperatures the process takes place without activation. The process of decrease in the formaldehyde polymerization rate at constant temperature becomes noticeable even for low degrees of conversion ($\sim 0.2-0.5\%$). It is connected with a decrease in the growth constant on development of the $1/2$

USSR

KIRYUKHIN, D. P., et al., Vysokomokulyarnyye soyedineniya, Vol 14, No 10, 1972, pp 2115-2119

polymer chain in the solid crystal. Two different processes take place in solid formaldehyde: the rate of the first process depends sharply on the temperature and it is exhibited primarily at relatively high temperatures (80-140°K); the second process which is in practice thermally independent becomes predominant at low temperatures (80-15°K). This indicates that at low temperatures the chain propagation mechanism connected with tunnel proton transfer becomes predominant in solid formaldehyde.

2/2

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PREPARATION OF GAMMA, GLOBULIN G FRACTIONS WITH VARIOUS ISOELECTRIC
POINTS BY AN ELECTROCONVECTION METHOD -U-
AUTHOR--KIRYUKHIN, I.F. K
COUNTRY OF INFO--USSR
SOURCE--LAB. DELD 1970, (3), 158-60
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PROTEIN, GAMMA GLOBULIN, CHEMICAL SEPARATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0430 STEP NO--UR/9099/70/000/003/0153/0160
CIRC ACCESSION NO--AP0132655
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. FOR SEPN. OF PROTEINS BY
ELECTROCONVECTION WAS DESIGNED. THE CONSTRUCTION AND OPERATING
CONDITIONS ARE DESCRIBED. THE METHOD WAS APPLIED TO THE FRACTIONATION
OF HUMAN GAMMAG GLOBULIN.

UNCLASSIFIED

SPRS 09208

6-73

4

14-3. INTENSIFICATION OF THE GROWTH PROCESSES OF EPITAXIAL LAYERS BY PHOTO EXCITATION AND THE APPLICATION OF ELECTROMAGNETIC FIELDS

[Article by Yu. D. Chistyakov, A. D. Gerasimov, Yu. P. Ryzhov, A. H. Pilyenko, V. A. Kiryukhin, V. I. Shereshev, Moscow: Novosibirsk, Ill. Journal of Photochemistry, 1972, p. 46] Poluprovodnikovaya Kristallo i Plazma, Russian, 17-17 June.

The effect on the system from photoradiation and electromagnetic fields permits, in contrast to the chemical effect, stimulation of defined chemical reactions both in the volume and at the phase interface. Each chemical act, depending on the electronic transitions taking place in it requires irradiation by light of a strictly defined wave length. The photoradiation offers the possibility of simple realization of a selective crystal growth with respect to area.

In the papers by Preslar and Komarova it was demonstrated that irradiation by ultraviolet light lowers the autogenous temperature of the silicon in the presence of hydrogen reduction of $SiCl_4$ and Si_2Cl_6 respectively, and with a constant temperature it increases the growth rate.

In the experiments of the authors by application of an electric field with an intensity of 3 kv/cm in the oxide process of silicon epitaxy, it was possible to increase the growth rate of the epitaxial layers and also to reduce the process temperature. In addition, the variation in intensity of the electromagnetic field permits variation of the alloying level without varying the composition of the vapor-gas mixture.

The indicated effects also open up new possibilities for investigating the technological processes.

KIRYUKHIN, V.A.

USSR

UDC 632.954:635.342

NALETOV, B. G., PETROV, N. P., Scientific Research Institute of Vegetable Farming, TRUBNIKOVA, T. I., TIMOFEEVA, T. A., KIRYUKHINA, N. N., Saratov Scientific Research Institute of Farm Hygiene

"Application of Semeron in Cabbage Fields"

Moscow, Khimiya v sel'skom Khozyaystva, No 8, 1972, pp 39-41

Abstract: Optimal doses of semeron for soddy alluvial soils of different mechanical composition were established, and the economic advantage of applying semeron to white cabbage was demonstrated. In medium-weedy cabbage fields of medium loamy and light loamy soils in flood plain areas, the optimal dosage of semeron is 0.5 kg/hectare. In heavy, very weedy ground the dosage should be increased to 0.7 kg/hectare. Chemical analysis of the cabbage demonstrated that semeron does not lower the quality or the food value. A study was also made of the hygienic conditions of labor of workers applying the herbicide and the effect of the compound on the organism of the workers. No deviations from the norm in the functional state of the organism was discovered for a semeron concentration in the respiratory zone of 0.003-0.42 mg/m³, on the clothes, 0.001-0.33 and on the skin, 0.001-0.073 mg/dm².

1/1

Titanium

USSR

UDC 621.88.085:669.295:620.17

GORSHKOV, A. I., MATYUSHKIN, B. A., CHUGUNOVA, R. S., and KIRYUKHINA, G. N.

"Properties of VT20 Weld Joints After Annealing"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73,
pp 62-63

Abstract: The mechanical properties of weld joints from VT20 alloy with and without a filler metal after annealing at 400-800°C were investigated. It was found that annealing of weld joints made using VT20-lsv or VT20 2sv filler wire and without the filler wire increases ductility although joints made with VT20-lsv wire had greater ductility. An annealing temperature of 800°C was recommended for increasing ductility and removing residual welding stresses. This increase in ductility is explained by the formation of an equilibrium structure of the metal in the heat-affected zone and weld seam and also, possible, by the precipitation of the beta-phase along the boundaries of the alpha- and alpha-prime phases. One figure, two tables.

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RADIOLOGICAL CHARACTERISTICS AND THE COURSE OF EARLY STAGES OF
ANTHRACOSIS -U-
AUTHOR--(05)-LYUBOPUDKOV, V.YE., ZHILKO, S.M., KIRYUKHINA, N.V., SIROTA,
G.M., SKUCHELYAS, A.R.
COUNTRY OF INFO--USSR
SOURCE--FRUNZE, SOVETSKOYE ZDRAVOOKHRANENIYE KIRGIZII, NO 1, 1970, PP
42-44
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RESPIRATORY SYSTEM DISEASE, X RAY APPLICATION, INDUSTRIAL
HYGIENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1212 STEP NO--UR/9093/70/000/001/0042/0044
CIRC ACCESSION NO--AP0123176
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123176

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHARACTERISTICS OF THE INITIAL STAGES OF ANTHRACOSIS, AS DETERMINED BY X RAY, WERE STUDIED, AND THE COURSE OF THE DISEASE WAS TRACED. COAL MINERS WERE STUDIED ON THE BASIS OF X RAYS REPEATED EVERY TWO TO THREE YEARS. IT WAS ESTABLISHED THAT LINEAR AND NODULAR LOCAL FIBROSES ARE THE INITIAL STAGES OF ANTHRACOSIS. SCLEROTIC FIBROSIS WAS FREQUENTLY COMBINED WITH BRONCHITIS OR EMPHYSEMA, WHICH SEVERLY COMPLICATE THE COURSE OF THE DISEASE. FACILITY: MEDICAL INSTITUTE IMENI A. M. GOR'KIY. FACILITY: OBLAST CLINICAL HOSPITAL OF OCCUPATIONAL DISEASES, DONETSK.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INCIDENCE, PECULIARITIES OF THE CLINICAL PICTURE AND COURSE OF
VARIOUS FORMS OF ANTRACOSIS -U-
AUTHOR--(C4)--LYUBOMIROV, V.YE., KIRYUKHINA, N.V., SIROTA, G.M.,
GURKOVSKAYA, S.M.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 71-74
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, RADIOGRAPHY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1911

STEP NO--UR/0504/70/042/006/0071/0074

CIRC ACCESSION NO--APC129260

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0129260

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A COMPARATIVE STUDY WAS MADE OF PECULIARITIES OF DEVELOPMENT, INCIDENCE, CLINICAL PICTURE AND COURSE OF NODULAR AND DIFFUSE SCLEROTIC FORM OF ANTRACOSIS. IT WAS ESTABLISHED THAT DIFFUSE SCLEROTIC FORM RAN A MORE SEVERE COURSE THAN NODULAR ONE, PROGRESSED MORE RAPIDLY ACCORDING TO THE DATA OF CLINICAL AND ROENTGENOLOGICAL STUDY. RECOMMENDATIONS ARE GIVEN CONCERNING THERAPY, EVALUATION OF CAPACITY FOR WORK AND PLACEMENT OF PATIENTS.
FACILITY: KAFEDRA PROFPATOLOGII DONETSKOGO MEDITSINSKOGO INSTITUTA I OBLASTNAYA KLINICHESKAYA BOL'NITSA PROFESSIONAL'NYKH ZABOLEVANIY, DONETSK.

UNCLASSIFIED

USSR

K UDC: 616.24-003.656.6

LYUBOMUDROV, V. Ye., ZHILKO, S. M., KIRYUKHINA, N. V., SIROTA, G. M., SKOCHELYAS, A. R., TAUSHAN, M. T., and YARTSEVA, P. A., Medical Institute imeni A. M. Gor'kiy, and Oblast Clinical Hospital of Occupational Diseases, Donetsk

"Radiological Characteristics and the Course of Early Stages of Anthracosis"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 1, 1970, pp 42-44

Abstract: Characteristics of the initial stages of anthracosis, as determined by x-ray, were studied, and the course of the disease was traced. Coal miners were studied on the basis of x-rays repeated every two to three years. It was established that linear and nodular local fibroses are the initial stages of anthracosis. Sclerotic fibrosis was frequently combined with bronchitis or emphysema, which severely complicate the course of the disease.

1/1

KIRYUKIN, V. V., SHNAREVICH, A. A.

"Analytic Estimates of the Probability of Unstable States in One Queueing System"

Tr. Sib. Fiz.-tekhn. In-ta Pri Tomsk. Un-ve [Works of Siberian Physics and Technology Institute at Tomsk University], No 51, 1970, pp 112-115, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V83 by Ye. Kashafutdinova).

Translation: The functioning of a single-channel queueing system with failures, representing a model of certain transport problems with finite number v of waiting locations is studied in a fixed time sector $0 \leq t \leq T$. It is assumed that at moment in time $t = 0$, n requests ($n \geq v$) are received, which are serviced by moment $t = T$ with probability 1. During the time interval $0 \leq t \leq T$, the system receives a random flow of requests. Each request takes a free place in line and remains in line until the end of the interval $(0, T)$, or is lost if there are no free places in line at the moment of arrival of the request. The input and output flows of requests are independent with arbitrary distributions $V_m(t)$ and $I_k(t)$ respectively, where $V_m(t)$ is the probability that m requests have been received by the system by moment t , while $I_k(t)$ is the probability that exactly k requests have left the system by moment t . $P'(t)$, the upper boundary of the probability of loss of a request at moment t , is defined:

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USSR

UDC 519.217

KIRYUKIN, V. V., SHNAREVICH, A. A., Tr. Sib. Fiz.-tekhn. In-ta Pri Tomsk.
Unte, No 51, 1970, pp 112-115.

$$P'(t) = \sum_{k=0}^n I_k(t) \cdot \sum_{m=n+k-n}^m V_m(t),$$

allowing, in particular, estimation of the optimal values of various system parameters without the use of modeling. Results are presented from machine experiments for testing the adequacy of the analytic estimate.

USSR

UDC 612.015.32

ALIMOVA, Ye. K., KIRYUKOVA, and SHEPELEV, A. P., Biochemistry Department,
Rostov-on-Don Medical Institute

"Dynamics of Some Indexes of Lipid Metabolism After Acute Hyperthermia"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 8, 1971, pp 1,188-1,191

Abstract: Elevating the body temperature of dogs by 1° slightly increased the content of total lipids, nonesterified fatty acids (NFA), lipid phosphorus, and free and esterified cholesterol in the lungs and amount of NFA in the liver. A 5-6° elevation of temperature, which proved to be lethal, further increased the content of NFA and lipid phosphorus in the lungs while lowering total lipids and total cholesterol. All the indexes of lipid metabolism decreased in the liver. After the rectal temperature was raised 2 to 3° and hyperthermia halted, all the indexes in the liver returned to normal except NFA, which continued to increase. Meanwhile the amount of NFA in the lungs dropped to the original level while the content of total lipids, lipid phosphorus, and free and esterified cholesterol increased. The authors believe the edema of the lungs and brain, change in permeability of the blood-brain barrier, lysis of erythrocytes, and hemorrhages observed in overheated animals may be due to increased permeability resulting from structural changes in the lipids of the cell membranes.

1/1

Immunology

USSR

UDC 576.858.25.097.2.077.3

6

GAYDAMOVICH, S. Ya., OBUKHOVA, V. R., MEL'NIKOVA, Ye. E., VOLOKHOVA, N. A., KIRYUSHCHENKO, T. V., KLISENKO, G. A., KRASNOBAYEVA, Z. N., LAVROVA, N. A., SHARIPOVA, Sh. A., and SHANOYAN, N. K., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Use of Ultrasonic to Increase Arbovirus Antigen Activity in Serological Tests in Vitro"

Moscow, Voprosy Virusologii, No 3, May/Jun 1973, pp 356-360

Abstract: An ultrasonic technique to increase antigen activity was tested on five groups of arbovirus antigens. Antigens prepared from suckling mouse brain by the sucrose-acetone and freon methods, or in chick fibroblasts without preliminary processing, were subjected to 30-40 sec of 20,000-25,000 Hz ultrasonic treatment. Titers determined before and after treatment by hemagglutination inhibition (HAI), complement fixation (CF), and agar gel diffuse precipitation (AGDP) were compared. For group A and B arboviruses CF and HAI titers increase 4-8 times after treatment, while AGDP titers remained unchanged. In the Kemerovo-Bunyamvera-California group, the CF titers increased by 2-4 times, and no change was observed in HAI titers. CF titers increased 2-8 times for all but Neapolitan arbovirus of the Phlebotomus group.

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USSR

GAYDAMOVICH, S. Ya., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 356-360

The only HAI response in this group was by Bujaru arbovirus, and only after treatment the AGDP titers increased in a few cases. Ultrasonic treatment had an especially favorable effect on CF and AGDP titers in the Uukuniemi group, while changes in HAI titers were less pronounced. Thus ultrasonic treatment normally facilitates antigen activity in CF and HAI reactions and has a variable effect on the AGDP reaction. Treated antigens did not lose specificity. It is concluded that ultrasonic treatment can be used not only to increase titers but also to reveal titers of relatively inactive antigens.

2/2

- 17 -

USSR

UDC 576.858.25.097.34

KIRYUSHCHENKO, T. V., and GAYDAMOVICH, S. Ya., Institute of Virology imeni
D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Direct and Indirect Hemagglutination Tests With Sumakh-Uukuniyemi Virus"

Moscow, Voprosy Virusologii, No 1, 1973, pp 117-122

Abstract: An absence of information on the hemagglutinating properties of Sumakh-Uukuniyemi virus and on possibilities for sensitizing erythrocytes to it for direct and indirect hemagglutination test purposes promoted the research described. The best hemagglutinin accumulation was obtained when specific antigen was prepared by alkali extraction in the presence of freon or sucrose-acetone with subsequent Tween-80 and ether processing. Titers were 8-16 times higher with sucrose-acetone than with freon processing. In both cases 37°C and pH 5.6-6.0 are optimum for hemagglutination and hemagglutination-inhibition tests. Dilution of antigen with phosphate buffer improved results. The virus's agglutinating ability was tested on erythrocytes of six species of mammals and birds. Results varied depending on species, probably due to differences in erythrocyte densities which affected available surface area and receptor quantity. Treatment of erythrocytes with trypsin and calcium ions improved indirect hemagglutination 2-8 times by increasing erythrocyte sensitivity. Dextrose-veronal-gelatine buffer worked best for erythrocyte dilution. Such
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USSR

KIRYUSHCHENKO, T. V. and GAYDAMOVICH, S. Ya., Voprosy Virusologii, No 1, 1973, pp 117-122

extensive processing is apparently necessary because hemagglutinins of this virus group are blocked by inhibitors. Due to the difficulties of sensitizing erythrocytes. The hemagglutination-inhibition test is recommended when hemagglutinating antigen is available.

2/2

- 41 -

USSR

UDC 531.55:521.1

KIRYUSHENKOV, V. N.

"Differential Equations for Determining the Perturbations of Elements of the Intermediate Orbit of a Satellite Based on the Problem of Two Fixed Centers"

Soobshch. Astron. in-ta im. P. K. Shternberg (Reports of the Astronomy Institute imeni P. K. Shternberg), 1970, No 165, pp 3-13 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10A89)

Translation: Equations of perturbed motion are derived for orbit elements in the generalized problem of two fixed centers. Derivation of these equations is based on solution of this problem by the method of varying arbitrary constants (using Lagrange brackets). It was assumed in deriving the equations that the perturbing forces are conservative. Quantities suitable for analyzing the perturbed motion of satellites in the case of small eccentricities and inclinations are chosen as the osculating elements. V. G. Deymin.

1/1

Acc. Nr: **0049516** Abstracting Service: **CHEMICAL ABST. 5/70**Ref. Code: **480079**

101080t Mass-spectrometric determination of the amino acid sequence in peptides. XII. Syntheses of derivatives of peptide containing asparagine and glutamine residues. Miroshnikov, A. I.; Kiryushkin, A. A.; Ovchinnikov, Yu. A. (Inst. Khim. Priro. Soedin., Moscow, USSR). Zh. Obsch. Khim. 1970, 40 (1), 223-35 (Russ). A series of peptides was synthesized to obtain data on their mass spectra. Reaction of equimolar aints. of amino acids with the *N*-hydroxysuccinimide ester of decanoic acid in aq. dioxane-NaHCO₃ at room temp. gave the following decanoylamino acids (Dec = decanoyl): Dec-L-Asn-OH, m. 138-40°; Dec-Gly-OH, m. 115°; Dec-L-Gln-OH, m. 155-7°; Dec-L-Trp-OH, m. 94-5°; Dec-L-Phe-OH, m. 102-3°; Dec-L-Val-OH, m. 101-3° (the last 2 were best prepd. from decanoic acid and Et₃N with EtO₂CCl, followed by the appropriate amino acid and aq. NaOH in Me₂NCHO-THF. Treating *N*-acylamino acids and *N*-hydroxysuccinimide with dicyclohexylcarbodiimide (DCC) in dioxane overnight at room temp. gave the following *N*-hydroxysuccinimide esters of *N*-acylamino acids or peptides (B = *tert*-butoxycarbonyl, Z = carbobenzoxy, Su = succinimido): B-DL-Ala-OSu, m. 140-2°; B-L-Ala-OSu, m. 144-7°; Z-L-Ala-OSu, m. 122-3°; B-L-Phe-OSu, m. 153°; B-D-Phe-OSu, m. 152-3°; B-L-Pro-OSu, m. 134-6°; B-L-Ile-OSu, m. 90-2°; B-D-Met-OSu, m. 129-30°; Z-L-Phe-OSu, m. 140°; Z-L-Val-OSu, m. 127-8°; Dec-Gly-OSu, m. 87-8°; Dec-L-Gln-OSu, m. 101-3°; Dec-L-Asn-OSu, m. 90-2°; Dec-L-Phe-OSu, m. 113-14°; Dec-L-Trp-OSu, m. 128-8°; Dec-L-Val-OSu, m. 86-7°;

REEL/FRAME

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Dec-Gly-Gly-"Sar"-OSu, — (amorphous); Dec-L-Gln-L-Asn-OSu, m. 165-7°; Z-L-Asn-(ONP): (ONP = *o*-nitrophenyl), m. 165-6°; and Z-L-Gln-ONP, m. 155-6°. Treating the *N*-hydroxysuccinimide esters of acylamino acids with amino acid Me ester-HCl in the presence of Et₃N in dioxane at room temp. gave the following Me esters of *N*-acyl peptides: Z-L-Ala-L-Ala-OMe, m. 105-7°; B-DL-Ala-Gly-OMe, m. 101-3°; B-D-Phe-L-Met-OMe, m. 138-9°; Z-L-Val-L-Val-OMe, m. 109-10°; B-L-Pro-D-Ala-OMe, oil; B-L-Ile-Gly-OMe, m. 100-2°; B-L-Phe-L-Arg-(NO₂)-OMe, — (amorphous); Z-D-Val-D-Ala-OMe, m. 147-9°; Z-L-Phe-Gly-OMe, m. 140-2°; B-DL-Val-L-Leu-OMe, m. 114-15°; NPS-D-Phe-L-Leu-OMe (NPS = *o*-nitrophenylsulfenyl), m. 114-15°; Z-L-Asn-L-Leu-OMe, m. 154-6°; Z-L-Gln-L-Phe-OMe, m. 194-6°; Z-L-Phe-L-Gln-OMe, — (amorphous); B-L-Ile-L-Ala-L-Ala-OMe, m. 185-6°; and B-D-Phe-D-Phe-D-Phe-L-Met-OMe, m. 96-7°; Z-L-Asn-L-Val-OBu-*tert*, m. 129-31°, was prepd. similarly. Some of the above were prepd. from acylamino acids and an amino acid ester by the DCC route or from the amino acid and a carbobenzoxyamino acid *p*-nitrophenyl ester in the presence of Et₃N, or from a carbobenzoxyamino acid and the Me ester of an amino acid in the presence of BuO₂CCl and Et₃N. Treating the acyl peptide in EtOH with aq. NaOH gave acyl peptides: B-DL-Ala-Gly-OH, m. 169-71°; Z-L-Phe-Gly-OH, m. 153-4°; Z-D-Val-D-Ala-OH, m. 167-9°; Dec-Gly-L-Pro-OH, m. 107-9°; and Dec-Gly-Gly-"Sar"-OH, m. 133-4°; the last 2 were best prepd. from the amino acid and the *N*-hydroxysuc-

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cinimide ester of decanoic acid as above. Keeping the Me esters of carbobenzoxy peptides with HBr in AcOH or *tert*-butoxycarbonyl peptides with dry HCl in EtOAc gave the following Me esters of dipeptides: H-L-Ala-L-Ala-OMe.HBr; H-L-Val-L-Val-OMe.HBr; H-L-Asn-L-Leu-OMe.HBr; H-L-Gln-L-Phe-OMe.HBr; H-L-Phe-L-Gln-OMe.HBr; H-D-Phe-L-Met-OMe.HBr; H-D-Phe-L-Met-OMe.HCl; H-D-Phe-L-Leu-OMe.HCl; H-L-Pro-D-Ala-OMe.HCl; H-DL-Val-L-Leu-OMe.CF₃CO₂H; H-L-Ile-Gly-OMe.CF₃CO₂H; H-L-Phe-L-Arg(NO₂)-OMe.CF₃CO₂H; H-L-Asn-L-Val-O-Bu-*tert*; and H-L-His-L-Leu-OMe.2HCl. Removal of the various protective groups by appropriate means gave the esters of the *N*-acyl tripeptides: B-L-Phe-L-Pro-D-Ala-OMe, m. 120-1°; B-L-Ala-L-Ile-Gly-OMe, — (amorphous); Dec-L-Val-L-Asn-L-Val-OBu-*tert*, m. 258-60°; Z-L-Phe-L-His-L-Leu-OMe, m. 180-2°; B-L-Phe-DL-Val-L-Leu-OMe, m. 244-8°; B-DL-Ala-Gly-L-Met-OMe, oil; Z-L-Leu-L-Val-L-Val-OMe, m. 142-3°; NPS-D-Ser-L-Ile-Gly-OMe, m. 210-11°; and Z-L-Glu(OMe-γ)-D-Phe-L-Leu-OMe, — (amorphous). Treating an acylamino acid with pivaloyl chloride, followed by an ester of an amino acid in pyridine-Et₃N in CHCl₃ gave: Dec-L-Asn-L-Phe-L-Arg(NO₂)-OMe (I), m. 205-7°; Dec-Gly-L-Pro-L-Asn-OMe, m. 212-13°; removal of the nitro group from I with H over Pd gave the Me ester of decanoyl-L-asparaginyl-L-phenylalanyl-L-primidylornithine, m. 216-18°. Treating the carbobenzoxy

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derivs. with HBr in AcOH gave the following Me esters of tripeptides; while others were prepd. with HCl in EtOAc or CF₃CO₂H under anhyd. conditions: H-L-Leu-L-Val-L-Val-OMe.HBr; H-L-Glu(OMe-γ)-D-Phe-L-Leu-OMe.HBr; H-L-Ile-L-Ala-L-Ala-OMe.HBr; H-L-Phe-L-His-L-Leu-OMe.2HBr; H-D-Phe-D-Phe-L-Met-OMe.HCl; H-L-Phe-L-Pro-D-Ala-OMe.HCl; H-D-Ser-L-Ile-Gly-OMe.HCl; H-L-Ala-L-Ile-Gly-OMe.CF₃CO₂H; H-L-Phe-DL-Val-Leu-OMe.CF₃CO₂H; and H-DL-Ala-Gly-L-Met-OMe.CF₃CO₂H. Treating the amino acids with acyl chloride in pyridine-Et₃N gave the following Me esters of acyl tetrapeptides: Z-L-Asn-L-Phe-DL-Val-L-Leu-OMe, m. 227-8°; Z-D-Val-D-Ala-Asn-L-Leu-OMe, amorphous; Z-L-Phe-Gly-L-Phe-L-Gln-OMe, m. 215-17°; Dec-L-Gln-D-Phe-D-Phe-L-Met-OMe, m. 202-4°; B-D-Phe-DL-Ala-Gly-L-Met-OMe, m. 278-9°; Dec-L-Asn-L-Leu-L-Val-L-Val-OMe, m. 278-9°; Dec-L-Asn-D-Ser-L-Ile-Gly-OMe, m. 245-7°; Z-L-Gln-L-Ala-L-Ile-Gly-OMe, m. 148-50°; Z-L-Ala-L-Glu(OMe-γ)-D-Phe-L-Leu-OMe, m. 276-8°; Dec-L-Gln-L-Ile-L-Ala-L-Ala-OMe, m. 299-301°; Z-L-Asn-L-Ile-L-Ala-L-Ala-OMe, m. 288-90°; and Dec-L-Asn-L-Phe-L-His-L-Leu-OMe, m. 214-15°. Treating the carbobenzoxy derivs. with HBr in AcOH gave H-L-Asn-L-Ile-L-Ala-L-Ala-OMe.HBr; H-L-Asn-L-Phe-DL-Val-L-Leu-OMe.HBr; H-L-Phe-Gly-L-Phe-L-Gln-OMe.HBr; H-D-Val-D-Ala-L-Asn-L-Leu-OMe.HBr; H-L-Gln-L-Ala-L-Ile-Gly-OMe.HBr; and H-L-Ala-L-

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Glu(OMe- γ)-D-Phe-L-Leu-OMe.HBr. Similarly, the action of $\text{CF}_3\text{CO}_2\text{H}$ on the *tert*-butoxycarbonyl deriv. gave H-D-Phe-DL-Ala-Gly-L-Met-OMe. $\text{CF}_3\text{CO}_2\text{H}$. Similarly were obtained H-Gly-L-Phe-Gly-L-Phe-L-Gln-OMe.HBr; H-D-Met-L-Gln-L-Ala-L-Ile-Gly-OMe.HCl; and H-L-Phe-Gly-L-Asn-L-Phe-DL-Val-L-Leu-OMe.HBr). The DCC method was used to prepd.: Dec-L-Asn-D-Ile-L-Ala-L-Ala-OMe, m. 96-7°; Dec-Gly-Gly-"Bar"-L-Gln-L-Phe-OMe, m. 212-14°; Dec-L-Gln-L-Asn-L-Phe-L-Pro-D-Ala-OMe, m. 182-4°; Dec-L-Gln-D-Val-D-Ala-L-Asn-L-Leu-OMe, m. 267-9°; Dec-L-Trp-D-Val-D-Ala-L-Asn-L-Leu-OMe, m. 169-71°; Z-Gly-L-Phe-Gly-L-Phe-L-Gln-OMe, amorphous; Dec-L-Gln-D-Phe-DL-Ala-Gly-L-Met-OMe, m. 161-3°; Dec-L-Asn-L-Phe-DL-Ala-Gly-L-Met-OMe, m. 284-6°; B-D-Met-L-Gln-L-Ala-L-Ile-Gly-OMe, amorphous; Dec-L-Asn-L-Ala-L-Glu(OMe- γ)-D-Phe-L-Leu-OMe, m. 266-8°; Z-L-Phe-Gly-L-Asn-L-Phe-DL-Val-L-Leu-OMe, m. 267-9°; Dec-Gly-L-Phe-Gly-L-Phe-L-Gln-OMe, amorphous; Dec-D-Met-L-Gln-L-Ala-L-Ile-Gly-OMe, m. 242-3°; Dec-L-Phe-Gly-L-Asn-L-Phe-DL-Val-L-Leu-OMe, m. 244-6°; and Dec-L-Asn-L-Ala-D-Ala-D-Ala-OMe, m. 269-72°. The yields were 70-90%. Optical rotations were given for many of the compds. ... G. M. Kosolapoff

19801377

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN
PEPTIDES. XV. FRAGMENTATION OF PEPTIDES CONTAINING MONOAMINO
AUTHOR--(05)-SHEMUAKIN, M.M., OVCHINNIKOV, YU.A., KIRYUSHKIN, A.A.,
MIROSHNIKOV, A.I., ROZVNOV, B.V.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 443-60

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, PEPTIDE, ESTER, MASS SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1989/1254

STEP NO--UR/0079/70/040/002/0443/0460

CIRC ACCESSION NO--AP0107730

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 012
CIRC ACCESSION NO--AP0107730

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA WERE TABULATED FOR 17
PEPTIDES WITH ASPARTIC AND GLUTAMIC RESIDUES IN VARIOUS POSITIONS,
EXAMD. IN THE FORM OF ME OR TERT-BU ESTERS AT THE TERMINAL CO SUB2 H.
SUCH PEPTIDES HAVE RELATIVELY HIGH VOLATILITY. THE MASS SPECTRA SHOWED
THE USUAL AMINO ACID TYPE OF CLEAVAGE ALONG WITH LOSS OF ELEMENTS OF THE
ALC. OF THE ESTER AND OF THE RO SUB2 C GROUP. FACILITY: INST.
KHIM. PRIR. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN
PEPTIDES. XIII. FRAGMENTATION OF PEPTIDES CONTAINING ASPARAGINE AND
AUTHOR--(05)-SHEMYAKIN, M.M., OVCHINNIKOV, YU.A., KIRYUSHKIN, A.A.,
MIROSHNIKOV, A.I., ROZYNOV, B.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSCH. KHIM. 1970, 40(2), 407-29
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEPTIDE, ASPARAGINE, GLUTAMIC ACID, AMINE DERIVATIVE, MASS
SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/2017
CIRC ACCESSION NO--AP0120660
STEP NO--UR/0079/70/040/002/0407/0429
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA WERE TABULATED FOR 2 PEPTIDES CONTG. ASPARAGINE AND GLUTAMINE PORTIONS IN VARIOUS PARTS OF THE CHAIN, AND EXAMD. IN THE FORM OF ME OR TER-BU ESTERS. SUCH PEPTIDE WERE DECOMPD. BY ELECTRON IMPACT MAINLY ALONG THE LINES OF AMINO ACID TYPE FRAGMENTATION, ACCOMPANIED BY ELIMINATION OF NH SUB3 AND CARBOXAMIDE GROUP. FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN
PEPTIDES. XIV. SYNTHESIS OF DERIVATIVES OF PEPTIDES CONTAINING
AUTHOR--(03)-MIROSHNIKOV, A.I., KIRYUSHKIN, A.A., OVCHINNIKOV, YU.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 429-43
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MASS SPECTROMETER, CHEMICAL SYNTHESIS, AMINO ACID, PEPTIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1601 STEP NO--UR/0079/70/040/002/0429/0443
CIRC ACCESSION NO--AP0123449
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123449

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (Z EQUALS SUCCINIMIDO, CBO EQUALS CARBOBENZOXY, DEC EQUALS DECANOYL, NPS EQUALS O-NITRO PHENYLSULFENYL). TERT-BUTOXYCARBONYL AND BENZYLOXYCARBONYL METHODS WERE USED TO SYNTHESIZE PEPTIDES BY CONVENTIONAL ROUTES FROM N-DECANDYLAMINO ACIDS. THE FOLLOWING COMPS. ARE SHOWN ON MICROFICHE. THESE WERE PREPD. FOR MASS SPECTROSCOPIC STUDIES.

UNCLASSIFIED

USSR

UDC 575.111:576.851.5

SKAVRONSKAYA, A. G., and KIRYUSHKINA, A. A., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Repair of UV-Damaged DNA by Competent and Non-Competent Cells of *Bacillus subtilis*"

Moscow, Genetika, Vol 7, No 7, Jul 71, pp 102-108

Abstract: The activity of the system of dark restoration (HCR system) in cells that were in a competent state with respect to transformation was studied in experiments with *Bac. subtilis*. A competent population of *Bac. subtilis* cells was obtained according to G. Anagnostopoulos and J. Spizizen (J. Bacteriol., 81, 741, 1961). Transforming DNA was obtained from a dark culture of the prototroph *Bac. subtilis* strain 168 M received from Samenhoff (USA). Extraction of DNA was carried out by the Samenhoff method. The repair capacity of the cells was not lowered by the state of competency. DNA that entered competent cells showed an increased UV sensitivity during the first 1-3 min. This was not due to a loss of repair capacity by the recipient, but to the non-repairable (presumably single-strand) state of the transforming DNA. The maximum level of resistance of transformants to the action of UV rays was reached after 30 min of contact with the transforming DNA. How-

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SKAVRONSKAYA, A. G., et al., Genetika, Vol 7, No 7, Jul 71, pp 102-108

ever, even at this stage transformants were more sensitive to UV light than the general population of competent recipients. The greater sensitivity of transformants was due to 1) inactivation of transformed cells; 2) inactivation of fragments of transforming DNA before their integration with the genome of the recipient; 3) excision during dark restoration of sections of bacterial chromosomes that contained integrated fragments of the donor DNA.

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USSR

UDC: 533.9.03

BELAN, N. V., ~~KIRYUSHKO, N. I.~~, MASHTYLEV, N. A.

"Experimental Study of the Distribution of Current in a Coaxial Accelerator"

Samoletost. i tekhn. vozd. flota. Resu. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Air Force Technology. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 19, pp 28-32 (from EZh-Aviatsionnyye i raketnyye dvigateli, No 10, Oct 70, Abstract No 10.34.163)

Translation: The authors present the results of an experimental study using a differential magnetic probe to determine distribution of current with respect to length in the accelerating electrodes of a coaxial injector. It is shown that the current is continuously distributed with respect to the length of the accelerating electrodes, with a part of the current flowing on the surface of the insulator throughout the entire discharge. The results of localized current measurements by differential magnetic probe inside the accelerator are compared with integral measurements of the current in an accelerating circuit by using a Rogowski loop. Five illustrations, bibliography of seven titles. Resumé.

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USSR

UDC 666.764:536.21

DUDEROV, YU. G., and KIRYUTIN, A. A., Moscow Engineering Physics
Institute

"Heat Conductance of Boron Nitride- and Aluminum Nitride-Base
Ceramics"

Moscow, Ogneupory, No 9, 70, pp 54-55

Abstract: Nitride-base materials are effective high-temperature electric insulators. This article presents the results of experimental studies on certain properties of ceramics comprising 50% AlN+50% BN in a B-N-Al system. The material features fairly high hardness and strength and low electroconductivity. Since aluminum is the basic component and is completely nitrided at 1000-1100°C, the specimens were synthesized at 1100°C. On subsequent testing the material was found suitable for service at 1500°C. Measurements were also made of the thermal conductance of specimens heat treated at 1500°C in a nitrogen atmosphere: such specimens exhibited higher strength and electroconductivity

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DUDEROV, YU. G., and KIRYUTIN, A. A., Ogneupory, No 9, 70, pp 54-55

(probably due to extended nitriding). The coefficient of thermal conductance of specimens annealed at 1500°C was also higher than of a material with the same composition but annealed at 1100°C . The results of the study show that both thermophysical and electrophysical characteristics of nitride-base insulation ceramics are fairly high. It is therefore recommended that such materials be annealed at 1100°C unless the requirements with respect to breakdown voltage and purity are extremely rigid and higher annealing temperatures are specified.

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1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SOME CLINICO PATHOGENETIC CORRELATIONS IN VIRAL HEPATITIS AND OTHER
DISEASE OF THE LIVER -U-
AUTHOR-(03)-FARBER, N.A., KIRZHNER, L.S., MORGUNOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 50-54
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEPATITIS, BLOOD CIRCULATION, BIOPSY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1431 STEP NO--UR/0504/70/042/004/0050/0054
CIRC ACCESSION NO--AP0109491

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 35 PATIENTS WITH DISEASES OF THE LIVER (VIRAL HEPATITIS 10, CHRONIC HEPATITIS 11, LIVER CIRRHOSIS 8 AND OBSTRUCTION PANCREAS DUE TO MALIGNANT NEWGROWTHS 6) WERE SUBJECTED TO COMPLEX EXAMINATION WITH THE EMPLOYMENT OF CLINICO BIOCHEMICAL, HEPATORHEOGRAPHIC AND HISTO MORPHOLOGICAL (INTRAVITAL PUNCTURE BIOPSY OF THE LIVER) METHODS. THE TECHNIQUES OF THE VARIATIONAL STATISTICS WERE USED TO REVEAL THE DEGREE OF CORRELATION BETWEEN THE INDICES OF DISTURBED INTRAHEPATIC BLOOD CIRCULATION, BIOCHEMICAL AND STRUCTURAL CHANGES IN THE LIVER. IT WAS ESTABLISHED THAT THE INDICES OF HEPATOGRAPHY SERVE AS THE MOST ACCURATE INDICATORS OF FIBROSIS IN THE LIVER. FACILITY: KLINICHESKIY OTDEL INSTITUTA VIRUSOLOGII IM. D. I. IVANOVSKOGO AMN SSR AND GORODSKAYA KLINICHESKAYA INFEDTSIONNAYA BOL'NITSA NO 82, MOSCOW.

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